ICF-9740W

US Model
Canadian Model

FM/AM 2-BAND RADIO

SPECIFICATIONS

Frequency range:	FM87.5—108 MHz (3.43—2.78m) AM530—1,605 kHz (566—187m)
Antennas:	FM: AC power cord antenna External antenna terminals (75 ohms) AM: Built-in ferrite bar antenna
Speaker:	Approx. 16cm ($6^3/_8$ inches) dia.
Power output:	2W (at 10% harmonic distortion)
Power requirements:	120V ac, 60 Hz
Dimensions:	Approx. 330x232x136mm (w/h/d) ($13x9^1/_4x5^3/_8$ inches) Incl. projecting parts and controls
Weight:	Approx. 2.2kg (4 lb 13 oz)

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

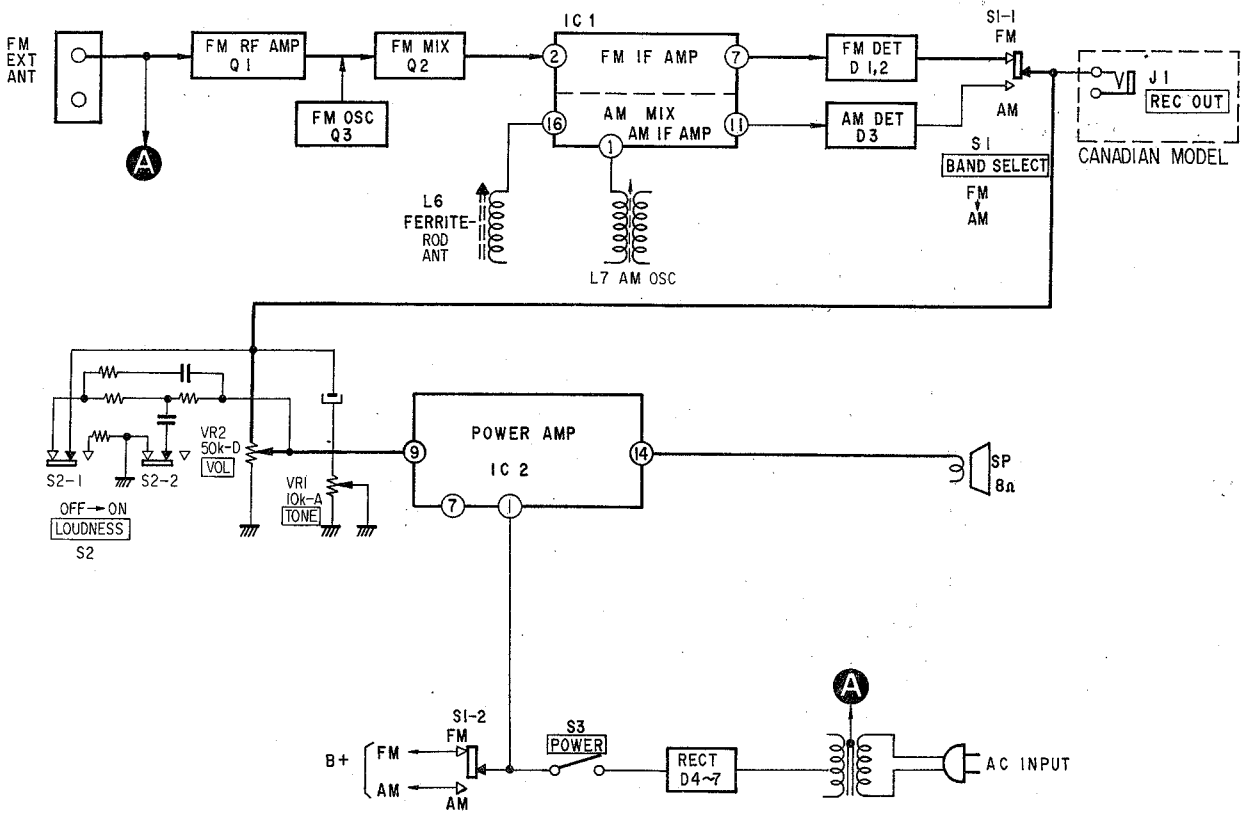
MICROFILM

SONY®

SERVICE MANUAL

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



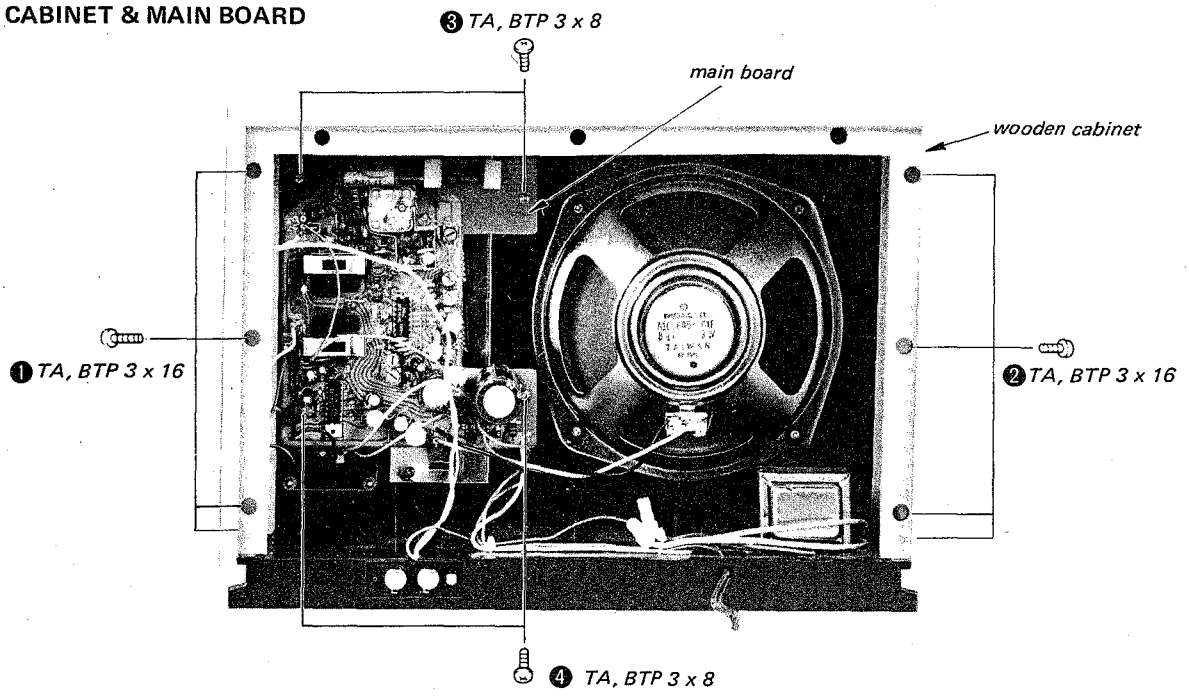
SECTION 2
DISASSEMBLY

- Follow the disassembly procedure in the numerical order given.

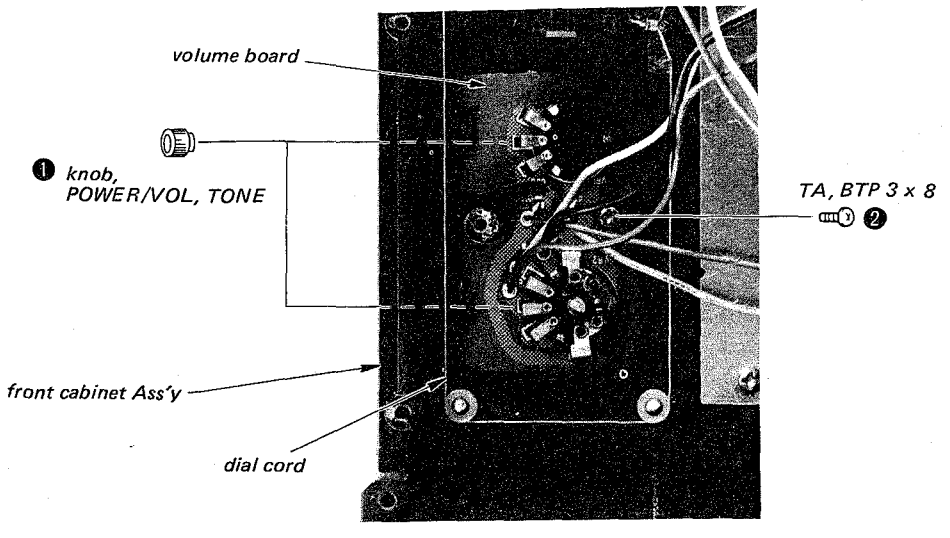
2-1. REMOVAL

REAR PANEL
Remove the three screws (TA, BTP3 x 20).

CABINET & MAIN BOARD

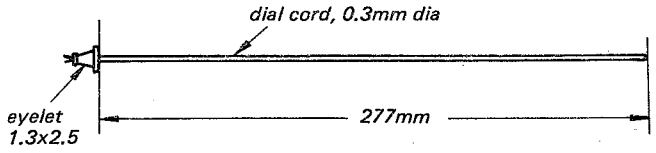


VOLUME BOARD

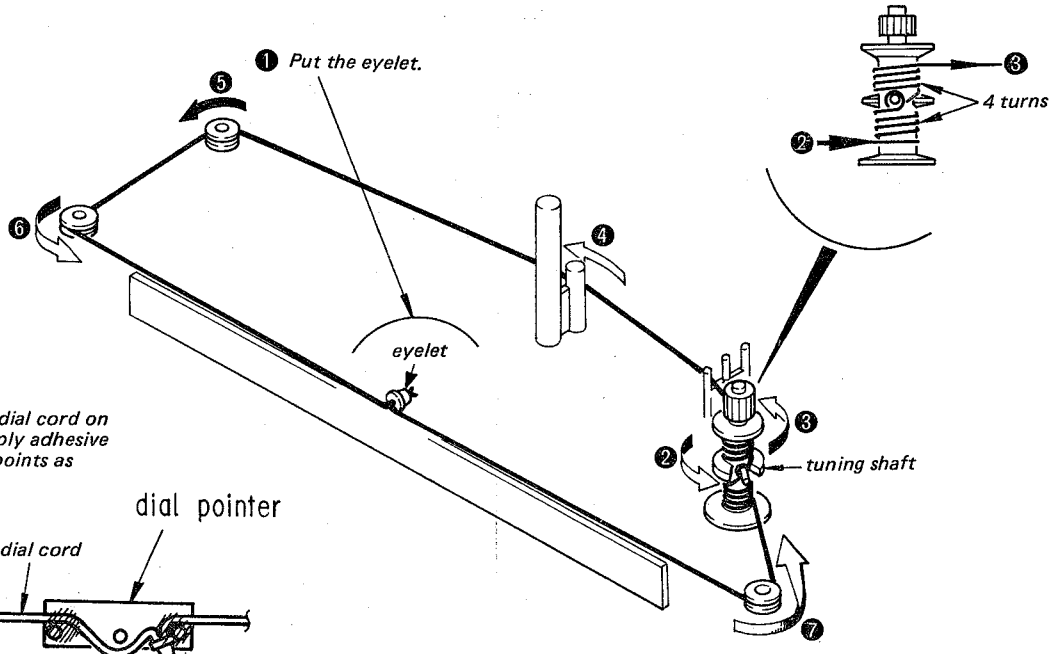


2-2. DIAL CORD STRINGING

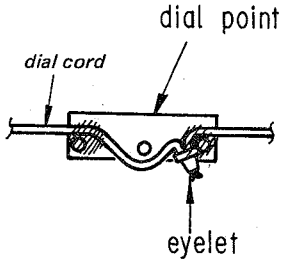
(1) Dial Cord Length

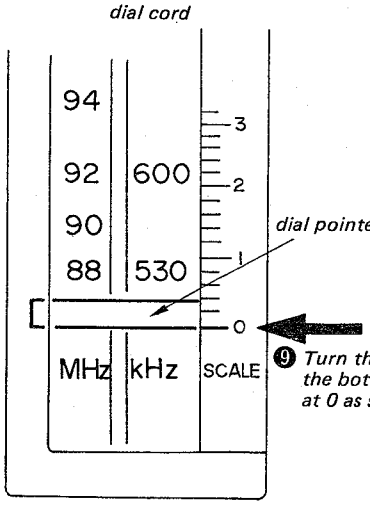


(2) Dial Cord Stringing

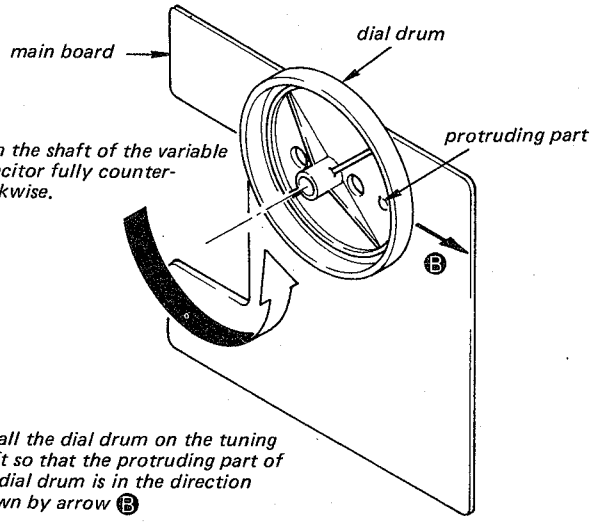


❽ Place the eyelet of dial cord on dial pointer and apply adhesive compound at two points as shown below.





❾ Turn the TUNING knob so that the bottom of dial pointer is at 0 as shown left.



❿ Turn the shaft of the variable capacitor fully counter-clockwise.

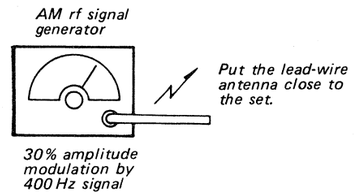
⓫ Install the dial drum on the tuning shaft so that the protruding part of the dial drum is in the direction shown by arrow Ⓑ

SECTION 3
ADJUSTMENTS

AM

Setting:

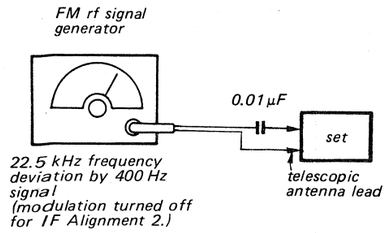
FUNCTION switch: AM

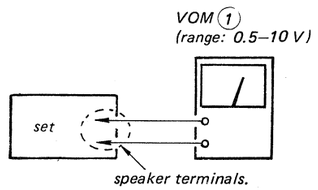


FM

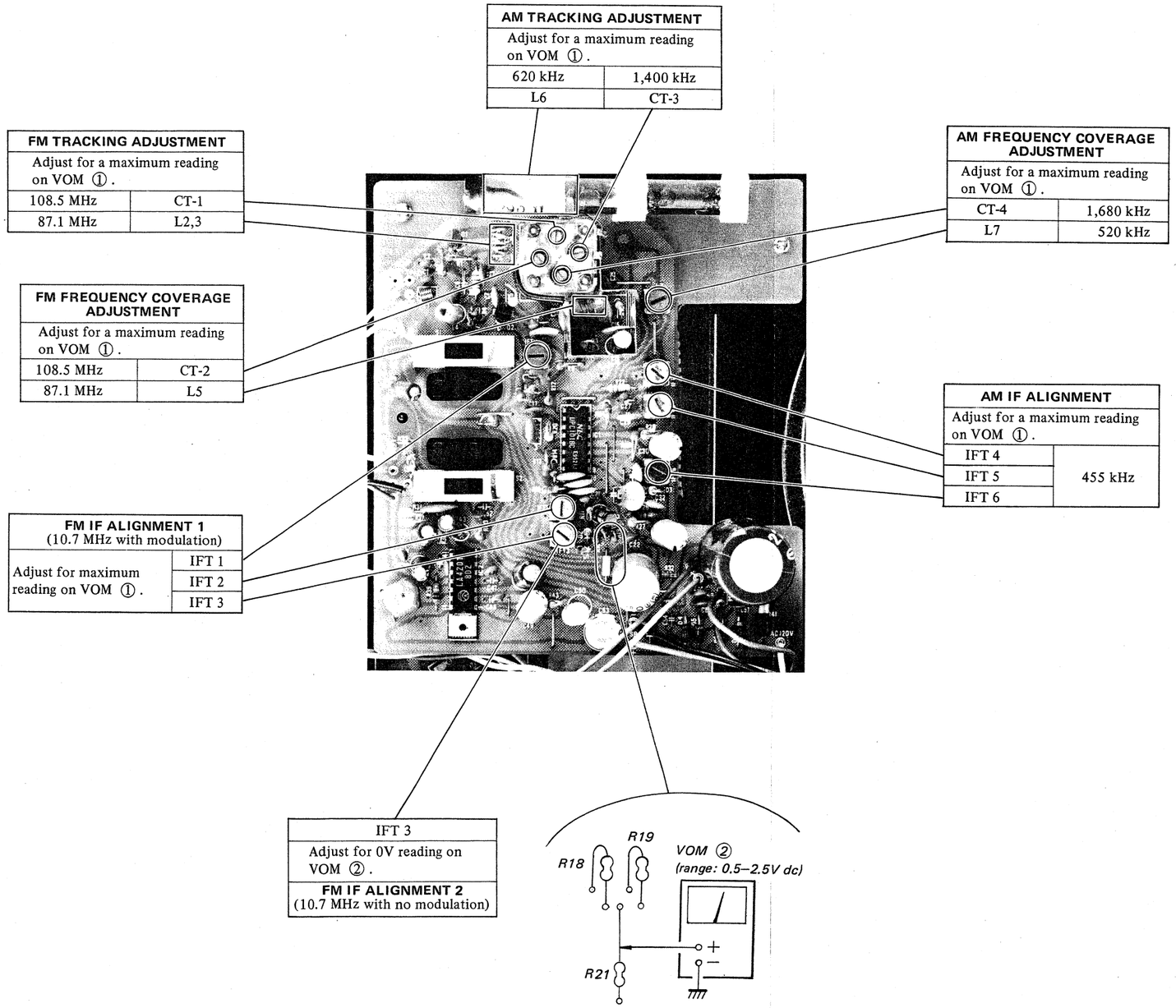
Setting:

FUNCTION switch: FM


FM rf signal generator
0.01µF
set
22.5 kHz frequency deviation by 400 Hz signal (modulation turned off for IF Alignment 2.)
telescopic antenna lead



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

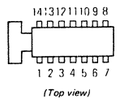


SECTION 4
DIAGRAMS

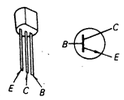
4-1. MOUNTING DIAGRAM

• SEMICONDUCTOR LEAD LAYOUTS

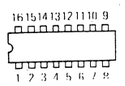
LA4201



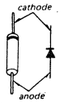
2SC1674
2SC1674K
2SC1675
2SC1675K



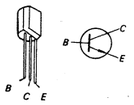
μPC1018C



IT22AM
IT23A
IT261
IN4002

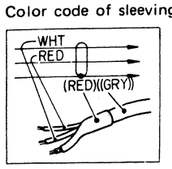


2SC710-13



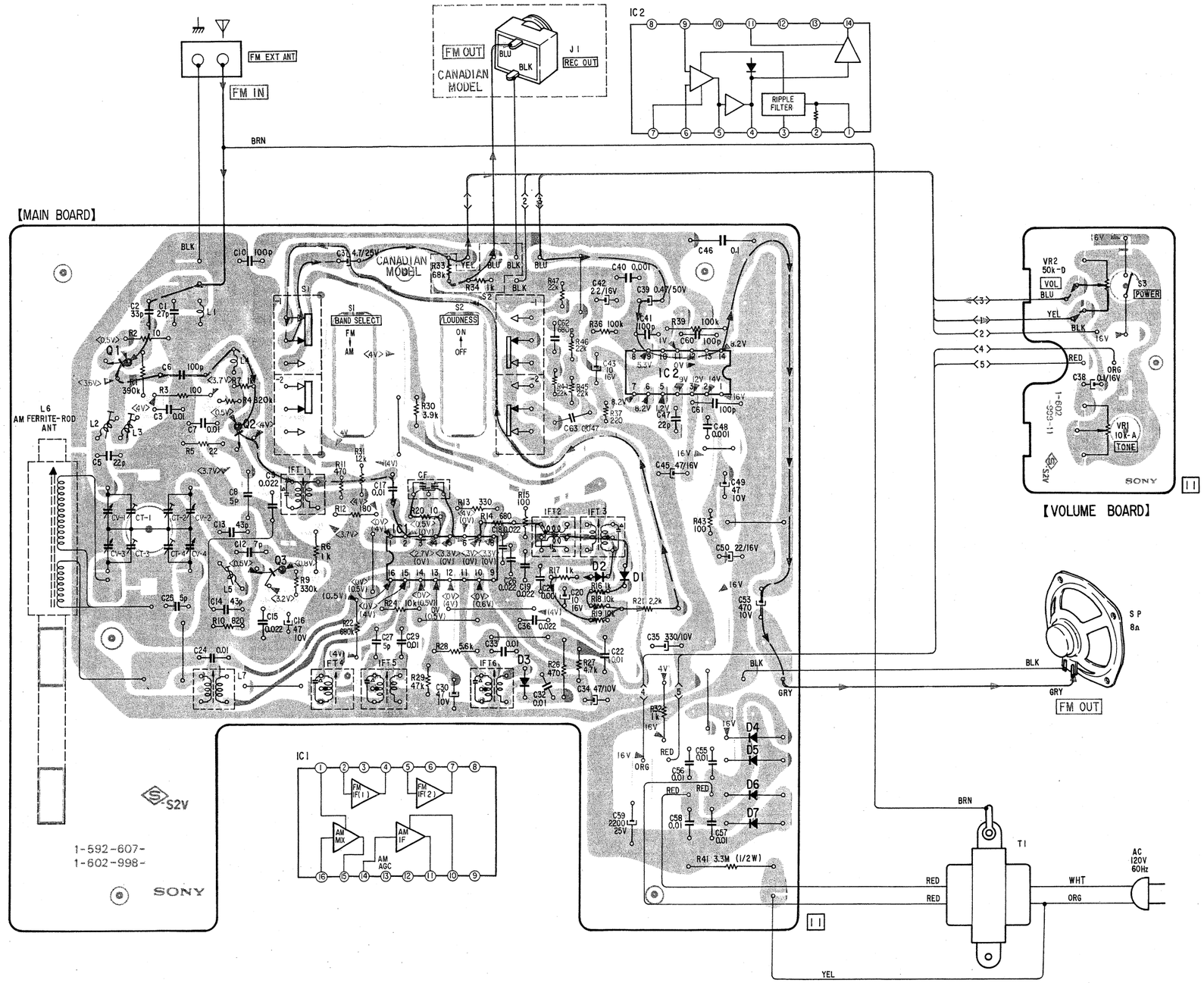
Note:

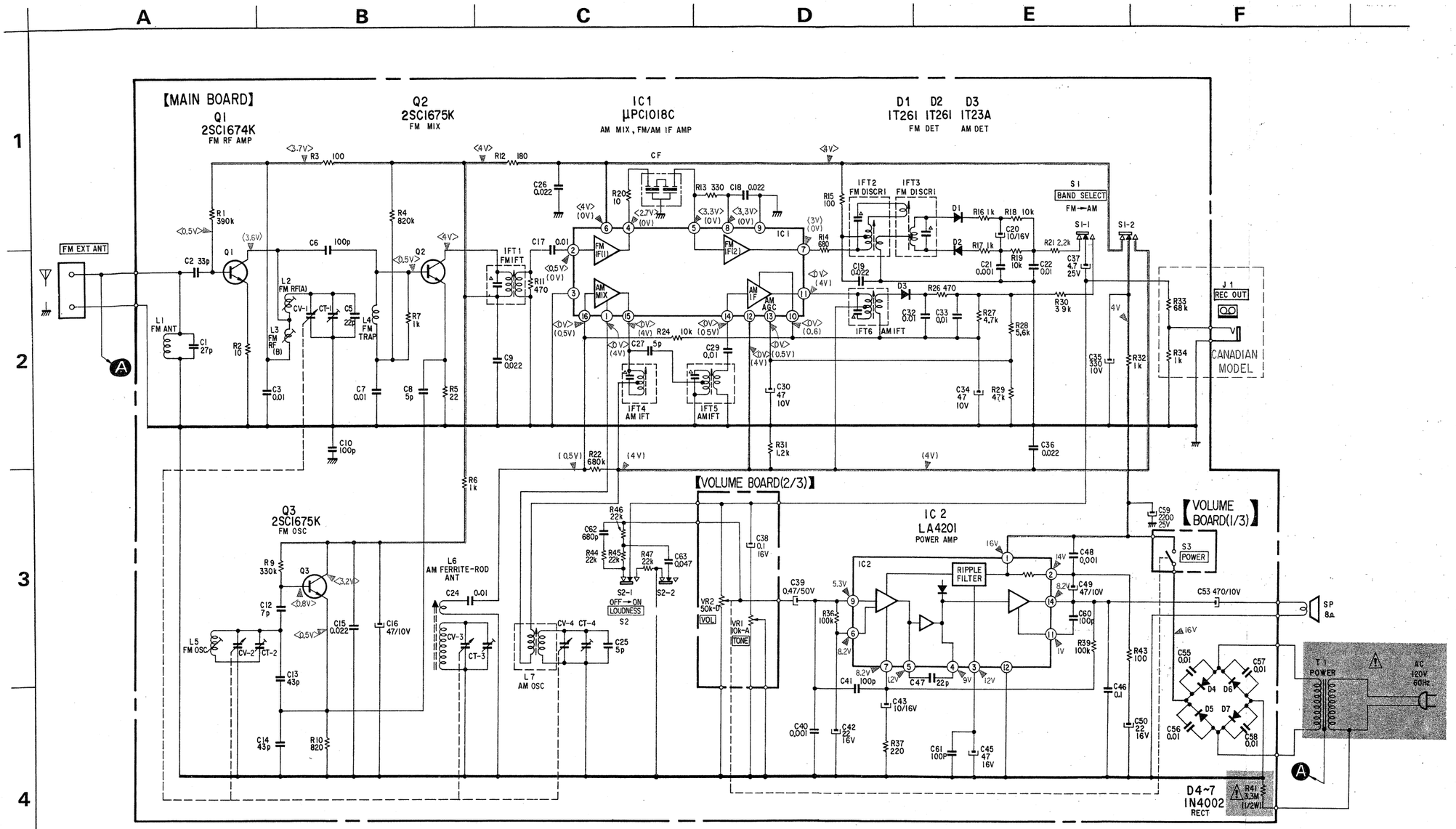
- Color code of sleeving over the end of the jacket.



- : B+ pattern
- : signal path

D	Q , IC
	IC2
	1
	2
	IC1
2 , 1	3
	3
	4
	5
	6
	7
D	Q , IC





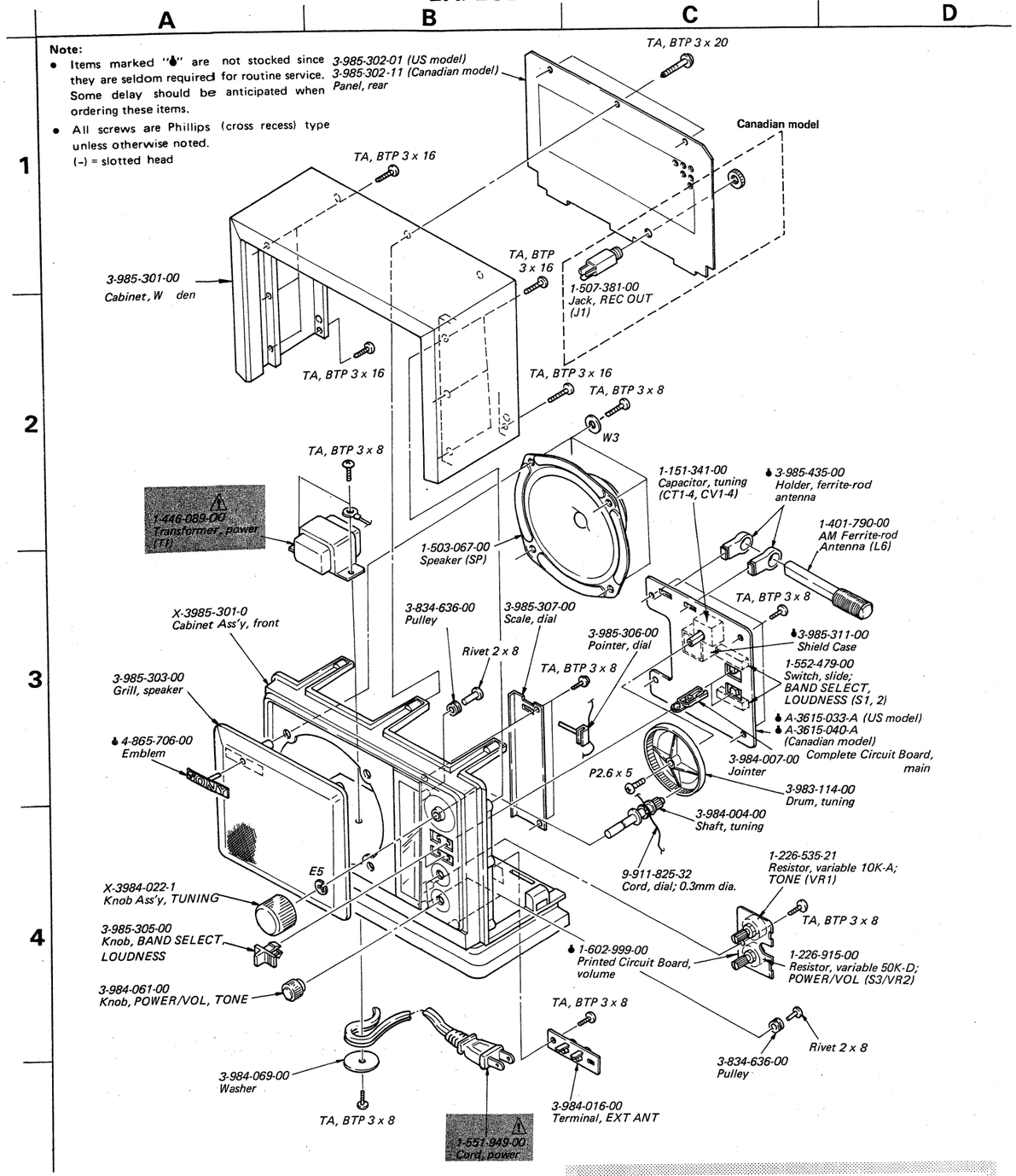
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- ——: B+ bus.
- ▭ : panel designation.
- Readings are taken under no-signal (detuned) conditions with a VOM (20kΩ/V).
  ( ) : AM
  < > : FM
- Voltage variations may be noted due to normal production tolerances.

SECTION 5
EXPLODED VIEW



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 6
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description		
		SEMICONDUCTORS		
		Transistors		
Q1	8-729-167-42	2SC1674		
Q2, 3	8-729-671-13	2SC710–13		
		ICs		
IC1	8-759-110-15	μPC1018C		
IC2	1-800-661-11	LA4201		
		Diodes		
D1, 2	8-719-026-11	IT261		
D3	8-719-422-21	IT22AM		
D4–7	8-719-200-02	10E2		
		CAPACITORS		
		All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics . elect: electrolytics		
C1	1-102-968-00	27P		
C2	1-102-969-00	33P		
C3	1-101-923-00	0.01		
C5	1-102-967-00	22P		
C6	1-102-975-00	100P		
C7	1-101-923-00	0.01		
C8	1-102-942-00	5P		
C9	1-101-924-00	0.022		
C10	1-102-975-00	100P		
C12	1-102-944-00	7P		
C13, 14	1-102-521-00	43P		
C15	1-101-924-00	0.022		
C16	1-123-306-00	47	10V	elect
C17	1-101-923-00	0.01		
C18, 19	1-101-924-00	0.022		
C20	1-123-316-00	10	16V	elect
C21	1-161-026-00	0.001		(semiconductor)
C22	1-161-032-00	0.01		(semiconductor)
C24	1-101-923-00	0.01		
C25	1-102-942-00	5P		
C26	1-161-034-00	0.022		
C27	1-102-945-00	5P		
C29	1-101-923-00	0.01		
C30	1-123-306-00	47	10V	elect
C32, 33	1-161-032-00	0.01		(semiconductor)
C34	1-123-306-00	47	10V	elect
C35	1-123-309-00	330	10V	elect
C36	1-161-034-00	0.022		(semiconductor)
C37	1-123-328-00	4.7	25V	elect
C38	1-127-019-00	0.1	16V	solid aluminum
C39	1-123-351-00	0.47	50V	elect
C40	1-161-026-00	0.001		(semiconductor)
C41	1-102-975-00	100P		
C42	1-123-317-00	22	16V	elect
C43	1-123-316-00	10	16V	elect
C45	1-123-319-00	47	16V	elect
C46	1-130-528-00	0.1		film
C47	1-102-967-00	22P		
C48	1-161-026-00	0.001		(semiconductor)
C49	1-123-306-00	47	10V	elect
C50	1-123-317-00	22	16V	elect
C53	1-123-310-00	470	10V	elect
C55–58	1-101-923-00	0.01		
C59	1-123-338-00	2200	25V	elect
C60, 61	1-102-975-00	100P		
C62	1-102-116-00	680P		
C63	1-101-006-00	0.047		
CT1–4 CV1–4	1-151-341-00	Tuning		
		RESISTORS		
		Common ¼W carbon resistor are omitted. Refer to the list on page 14 for their part numbers.		
R41	⚠1-202-725-00	3.3MΩ ½W, composition		
VR1	1-226-535-21	10kΩ-A, variable; TONE		
VR2	1-226-915-00	50kΩ-D, variable; VOLUME (including S3; power)		
		MISCELLANEOUS		
CF	1-527-795-71	Ceramic Filter, 10.7 MHz		

• Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	*Part No.*	*Description*
IFT 1	1-403-872-00	FM IFT
IFT 2	1-403-959-00	FM DISCRI
IFT 3	1-403-953-00	FM DSCRI
IFT 4	1-404-288-00	AM IFT
IFT 5	1-404-288-00	AM IFT
IFT 6	1-403-929-00	AM IFT
J1	1-507-381-00	Jack, REC OUT (Canadian model)
L1	♦ 1-401-228-00	Coil, FM ANT
L2	1-420-956-00	Coil, FM RF (A)
L3	1-420-957-00	Coil, FM RF (B)
L4	1-409-293-00	Coil, FM TRAP
L5	1-420-962-00	Coil, FM OSC
L6	1-401-790-00	AM Ferrite-rod Antenna
L7	1-405-685-00	Coil, AM OSC
S1, 2	1-552-479-00	Switch, slide; BAND SELECT/ LOUDNESS
S3	————	Switch, Power: included in VR2
SP	1-503-067-00	Speaker
T1	⚠ 1-446-089-00	Transformer, Power
	⚠ 1-551-949-00	Cord, power

PRINTED CIRCUIT BOARD

♦ 1-602-999-00	Volume

COMPLETE CIRCUIT BOARD

♦ A-3615-033-A	Main (US model)
♦ A-3615-040-A	Main (Canadian model)

ACCESSORIES & PACKING MATERIALS

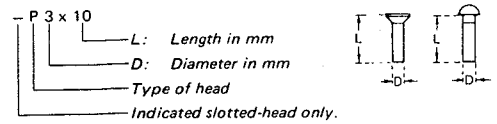
Part No.	*Description*
3-701-636-00	Bag, polyethylene
3-703-390-01	Instruction (US model)
3-903-184-01	Label, indicating; material (US model)
3-985-312-00	Carton, individual (US model)
3-985-312-11	Carton, individual (Canadian model)
3-985-314-00	Cushion
3-993-230-31	Instruction, French (Canadian model)
3-995-884-21	Manual, instruction

1/4 WATT CARBON RESISTORS

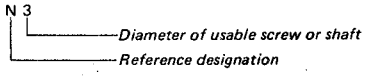
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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ICF-9740W

US Model

No. 1
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SUPPLEMENT

File this supplement with the service manual.

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

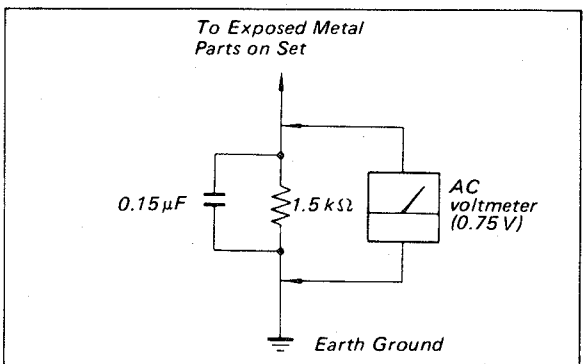

Fig. A. Using an AC voltmeter to check AC leakage.

SONY
SERVICE MANUAL

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